

CLAIMS

1. A device for stimulating specific areas of a brain within a head, said device comprising:

5 an induction device;

at least one passive marker connected to the induction device, said at least one passive marker being detectable by a tracking system.

2. The device as set forth in claim 1, wherein the induction device is a coil
10 in the form of an eight.

3. A system for stimulating specific areas of the brain using an induction device having at least one tracking system detectable marker attached to the induction device, said system comprising:

15 at least one marker connected to the head;

a position detection device which detects the position of the at least one marker connected to the induction device and the at least one marker connected to the head; and

a simulation device which determines the area of stimulation in the brain to be
20 stimulated by the induction device, wherein a model of the induction device and/or of the head is used for simulating.

4. The system as set forth in claim 3, said system comprising:

a display device which displays areas on the brain to be stimulated by the
25 induction device.

5. The system as set forth in claim 3, said system comprising:

a device for automatically positioning the induction device.

6. The system as set forth in claim 5, wherein the device for automatically
30 positioning the induction device is a rotating robot arm.

7. The system as set forth in claim 3, wherein the at least one marker connected to the head is a passive marker.

5 8. The system as set forth in claim 3, said system further comprising:
a device which generates a simulation model of the induction device.

9. The system as set forth in claim 8, said system further comprising:
a device which generates a simulation model of the head.

10 10. The system as set forth in claim 9, wherein the device which generates a simulation model of the head uses a finite, multi-shelled model.

11. The system as set forth in claim 10, wherein the device which generates a simulation model of the head uses a model including a plurality of nested spherical or ellipsoidal shells having adjustable thicknesses.
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12. The system as set forth in claim 11, wherein the device that generates a simulation model of the head assigns different dielectric constants to each of the plurality of nested spherical or ellipsoidal shells.
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13. The system as set forth in claim 3, said system further comprising:
a device that provides electrical impulses to the induction device.